time, will result in "no output" (see FIG. 6), although a single pulse might result from the system in any case.

The programmer array circuit of FIG. 4 can be produced as a true solid state compact keyboard by making a photograph of a drawing of a keyboard layout and, using conventional techniques, reducing it to a printed circuit so that a printed circuit picture of a keyboard is provided for replacing the standard push-button array. The outlines of "keys" on the board become the antennas **6** for the array switch stages A–J. On the opposite side of the printed circuit board, using either a double-sided laminate or a separate board, there are mounted the plurality of touch activated switch circuit stages A–J. The antennae connections of these stages are directly, through some bussing technique, mounted to the opposite side of the programming array laminate. Therefore, each individual section of the keyboard array becomes an extension of the touch activated switch circuits antennae. When the operator touches any of the sections of the keyboard array, the corresponding switch stages A–J are affected into the on-state or some more sophisticated function. If the base of the laminate is made out of a translucent or transparent material, a lamp may be located behind each of the keyboard sections or stations achieving a simple and direct indicator technique. To further simplify this economical device, the bases for the lamps could be etched onto one of the underlaminates. After the boards are prepared, gold, chrome, or any appropriate conducting hard coat is applied to the front (touch surfaces) to insure maximum beauty and wear.

A low voltage DC driven touch responsive DC ON-OFF switch circuit is shown in FIG. 8, utilizing a pair of the preset momentary switch circuits of FIG. 1 in combination with an ON semiconductor four-layer controlled rectifier such as an SCR **23**. The ON button is a straightforward preset momentary circuit as in FIG. 1 and similar components are represented by similar reference numerals. A load control silicon controlled rectifier **23**, having an anode **24**, has its cathode **25** connected to ground, and cathode gate **26** connected to output terminal **13** of the ON SCR **1**, such that SCR **1** constitutes a positive signal driver for gate **26** of SCR **23**. The OFF button comprises a preset momentary circuit according to FIG. 1 with the RC circuit and load in reverse position in the cathode and anode circuits respectively, as discussed in connection with FIG. 1. Anode **2'** of SCR **1'** is connected through load **14''** to terminal **12'**. Cathode **3'** is connected through the parallel connection of capacitor **11'** and resistor **10'** to terminal **12'** and thence to ground. Cathode gate **4'** is connected through the same type circuitry **7'**, **8'**, **9'** as SCR **1** to the touch activated element or antenna **6'** which constitutes the OFF touch element. One side of the main load **27** to be controlled is connected to the DC source V_o along with terminal **12**. The other side of the main load is connected to anode **24** which is also connected through capacitor **28** to anode **2'** of SCR **1'**. The OFF SCR **1'** effects anode turn-off of SCR **23** by dropping the anode voltage to below cut-off.

In normal circumstances SCR **23** is OFF and there is no current flow through the main load **27**. When the operator touches ON antenna **6** SCR **1** conducts, sending a positive drive pulse to gate **26**, causing SCR **23** to conduct or turn ON, resulting in current flow through load **27**. Once SCR **23** is turned ON it stays ON until turned OFF by positive action. When the OFF circuit of SCR **1'** is inactive, its anode **2'** is at V_o. When the operator's hand touches OFF antenna **6'**, SCR **1'** starts to conduct due to the drive pulse on gate **3'**, and the voltage of anode **2'** drops. This negative going signal change at anode **2'** is transmitted by capacitor **28**, which normally blocks the steady state DC, to anode **24** of SCR **23**, lowering the voltage of anode **24** and diverting its current so that SCR **23** is commutated OFF to deenergize load **27** when the current drops below the anode holding current. In effect, the OFF circuit produces a pulse opposite in polarity to the current on anode **24** to turn SCR **23** OFF. SCR **23** remains OFF until the operator again touches ON antenna **6**.

While the invention has been shown and described in certain preferred embodiments, it is realized that modifications can be made without departing from the spirit of the invention, and it is to be understood that no limitations upon the invention are intended other than those imposed by the scope of the appended claims.

What we claim as new and desire to secure by Letters Patent of the United States is as follows:

1. A solid state momentary switch device, responsive to the presence of an AC signal of ambient frequency in a passive foreign body of the essentially equivalent capacitance of the human body, comprising: a semiconductor means discontinuously switchable between a conductive state and a nonconductive state, said semiconductor means including two power terminals and an electric current responsive control terminal, said semiconductor means having a control terminal sensitivity not exceeding 10 microampers, said semiconductor means turning off when the current flowing therethrough drops below the value of the holding current therefor; a DC power source; an electric resistive load; a low pass filter connected at one end to said control terminal and at the other end to a power terminal, said filter being composed of a capacitor and a resistor connected in electrical parallel, the values of said capacitor and resistor being chosen to preferentially reject the AC voltage present on a foreign body, the control terminal being devoid of any other circuit means connecting it to the other power terminal; a time constant current flow control means for automatically varying the impedance thereof between a high impedance state and a low impedance state, said means consisting of a resistor and a capacitor connected in parallel with one another and jointly in series with said power terminals, said power source and said electrical load, said capacitor presenting a low initial impedance during charging and a high impedance after it is fully charged, said resistor being large enough to reduce the current flowing through the semiconductor means to below the holding current therefor in the absence of the capacitor; means for connecting said load, said DC power source, said time constant means and power terminals in series; an electrically conductive touch element disposed in spaced relation with said semiconductor means and adapted to have an AC signal potential applied thereto; and single wire circuit means including an isolating impedance solely running from said touch element to said electric current responsive control terminal so that when said touch element is coupled with said foreign body the AC signal for said body causes said semiconductor means to switch from a nonconductive state to a conductive state and to initiate operation of the time constant means for increasing the impedance thereof from a low impedance sufficient to provide effective power flow through the load to a high impedance state wherein the capacitor is charged and at which flow of current through the semiconductor means is effectively discontinued for the purpose of controlling flow of said electrical energy through said load for a predetermined period of time, said capacitor thereafter discharging through the resistor to ready the switch device for subsequent switching of the semiconductor means to a conductive state.

2. A solid state preset momentary switch device responsive to the presence of an AC signal of ambient frequency in a passive foreign body of the essentially equivalent capacitance of the human body comprising: a semiconductor means discontinuously switchable between a conductive state and a nonconductive state, said semiconductor means including two power terminals and an electric current responsive control terminal, said semiconductor means turning off when the current flowing therethrough drops below the value of the holding current